

There is evidence that some antibiotic resistance patterns develop because of antibiotic use, but they may also be plasmid related. Several laboratories are doing susceptibility testing of *N gonorrhoeae* routinely. Physicians treating gonorrhea must maintain a high level of suspicion and concern about treatment failures and think of resistance of the gonococcus rather than poor compliance as a cause.

Physicians should maintain an awareness of local resistance patterns and question their patients about both domestic and international travel. The days of a shot of penicillin and a pat on the back to treat gonorrhea are clearly over, and vigilance on the part of physicians may help prevent epidemics of resistant organisms in the United States.

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## Preventing Transmission of Human Immunodeficiency Virus Infection

IN JUNE 1986, the US Public Health Service held a workshop on the acquired immunodeficiency syndrome (AIDS) at Coolfont, Berkeley Springs, West Virginia, in which the course of the AIDS epidemic was projected through 1991. Some of the most important estimates were as follows:

- By the end of 1991, there will have been a cumulative total of more than 270,000 cases of AIDS in the United States (up from more than 38,000 as of July 1986), with more than 74,000 cases occurring in 1991 alone.
- By the end of 1991, there will have been a cumulative total of more than 179,000 deaths from AIDS in the US, with 54,000 of these occurring in 1991 alone.
- The vast majority of AIDS cases will continue to come from the currently recognized high-risk groups, including homosexual men and intravenous-drug users.
- New AIDS cases in men and women acquired through heterosexual intercourse will increase from 1,100 in 1986 to almost 7,000 in 1991.

Although one drug, zidovudine, has resulted in several months' prolongation of life and fewer opportunistic infections in AIDS patients, there is no satisfactory treatment for the causative agent of AIDS, the human immunodeficiency virus (HIV). Prospects for an effective vaccine against HIV are not promising for at least five years and possibly until the turn of the century. Therefore, for the foreseeable future, the most effective way of reducing the spread of HIV infection is through educating the public about the transmission of HIV, especially those persons at a higher risk for AIDS. Physicians have an important role and responsibility to play in this educational campaign in their daily interactions with patients.

The educational message must be direct rather than vague. "Always use a condom with a spermicidal lubricant from the start of sexual intercourse until the finish" is preferable to "Avoid bodily secretions." Educators, including physicians, must be prepared to use the vernacular and to take into account cultural traditions and practices of diverse groups, in-

cluding ethnic minorities and homosexual men. Preventing AIDS among intravenous-drug users may be challenging because of the distrust of authority in this population, and their sexual partners may be difficult to reach because the partners do not necessarily have contact with drug treatment centers. Nevertheless, drug users should be encouraged to use methadone and other treatment programs.

The voluntary, confidential use of the HIV antibody test should be encouraged for those who may be at risk for infection, both to identify persons in low-risk groups for education in preventing further transmission, and to serve as a starting point in identifying persons who may benefit from treatment as effective antiviral and immunomodulating agents become available. Patients should be counseled adequately about the implications of a confirmed positive HIV antibody test both before and after the test and should be assured of strict confidentiality. The final decision about whether to take the HIV antibody test should be made by the patient.

As HIV infection becomes more prevalent, the risk that health care workers will be exposed to blood from infected patients also increases, especially when blood precautions are not followed. The Centers for Disease Control have issued guidelines for preventing HIV transmission in health care settings. These guidelines emphasize the need for health care workers to treat blood and body fluids from *all* patients as potentially infected with HIV and to adhere rigorously to infection control precautions for minimizing the risk of exposure to blood and body fluids of all patients.

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## Preventing Influenza in Older Adults

THE US PUBLIC HEALTH Service's Advisory Committee on Immunization Practices recommends annual influenza immunization for persons aged 65 years and older and for other high-risk groups. Until recently, the recommendation was based primarily on extrapolated efficacy data from younger populations, rather than on direct studies in older age groups. Recent research not only confirms the efficacy of flu shots in older age groups, but suggests that the benefits of immunization may be greater than generally appreciated.

From data from the National Hospital Discharge Survey, it has been calculated that persons age 65+ have 370 per 100,000 excess hospital admissions during an influenza epidemic. This rate is more than ten times that of younger adults. The national cost of these excess hospitalizations was estimated at \$185 million. Yet, in a study of noninstitutionalized older adults in a large health maintenance organization, flu shots prevented 72% of influenza- and pneumonia-related hospital admissions during epidemic years.

In older adults in long-term-care facilities, vaccine efficacy is less (about 30%) due to age- and disease-related im-

pairments in immune function. But flu shots are considerably more effective at preventing the complications of influenza. Studies of a large series in long-term-care facilities report vaccine efficacies of 47% to 95% in preventing hospital admission, pneumonia, and death.

Present national vaccination rates of 20% are far below the national goal of 80%. Vaccination reminders mailed in the fall to high-risk persons have been shown in several settings to increase vaccination rates to 45% to 60% in the first year of mailing. Vaccination rates of 60% to 70% appear possible with yearly, repetitive reminders. Health care providers should strongly consider mailing flu-shot reminders to their high-risk patients when flu shots become available each fall.

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## Smoking Control—Policy and Legal Methods

AS A CONSENSUS HAS EMERGED that exposure to secondhand smoke is harmful, many smoking control advocates have shifted their attention from encouraging smokers to quit to restricting smoking in workplaces and public places. The rationale underlying this shift is the belief that smoking restrictions will not only protect the health of nonsmokers but also will encourage smokers to cut down or quit. This latter outcome could result from both a subtle increase in the social pressure against smoking and a limiting of the time available to smoke. There is evidence that smoking restrictions do encourage smokers to quit smoking. When Pacific Northwest Bell banned smoking in the workplace, enrollment in smoking cessation programs went from 13 to 174 employees per month.

The tobacco industry views the nonsmokers' rights movement as a major threat, and it has waged an aggressive campaign against the enactment of smoking restrictions. This tactic achieved some initial success as the tobacco industry used multimillion dollar advertising campaigns to defeat small, independent nonsmokers' rights groups in Florida and California. However, as the nonsmokers' rights groups shifted their attention from statewide campaigns, in which large advertising budgets are critical, to city and county campaigns, in which grass-roots support is critical, the tobacco industry suffered a series of defeats. The attention from and the success of local smoking restrictions in turn led to the enactment of state restrictions. Currently 10 states and more than 260 cities and counties have enacted laws restricting smoking in public places.

Experience with smoking restriction in both workplaces and communities shows that they are generally easy to implement and enforce. When Pacific Northwest Bell banned smoking, there were no lawsuits because of the ban, the unions supported the ban, and none of the 15,000 employees quit work because of the ban. In San Francisco, the ordinance against smoking in the workplace, which is one of the oldest

and toughest, has not caused any lawsuits, and no employer has been fined for noncompliance.

The nonsmokers' rights movement could be one of the most effective forces against smoking, and health care professionals should encourage the enactment of smoking restrictions whenever possible.

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## Preventing Dependency in the Elderly

DEPENDENCY IS USUALLY MEASURED in terms of functional measures such as activities of daily living, which includes competencies in feeding, bathing, dressing, toileting, ambulation, and continence. According to a 1982 national survey of long-term care, 19% of the 65-and-over age group had some degree of limitation in their activities of daily living, and 4% of the population was severely disabled. This proportion rises dramatically in the old-old age group—that is, 85 years of age and older. In fact, men and women age 85 years and older are four times more likely to be disabled than those aged 65 to 74. Almost half, or about 46%, of persons 85 years and older are disabled compared with only about 13% of persons age 64 to 74.

Another measure of dependency is nursing home admissions. Data from the 1985 National Nursing Home Survey indicate slightly less than 5% of the population age 65 years and older reside in nursing homes. This percentage rises dramatically for the older age subgroups, with 10% of persons older than 75 years of age and more than 22% of persons 85 years of age and older living in nursing homes.

The leading chronic conditions causing limitation of activity and loss of independence for the elderly, according to a 1982 survey by the National Center for Health Statistics, were arthritis, hypertension, hearing impairment, heart conditions, orthopedic impairment, sinusitis, visual impairment, diabetes mellitus, varicose veins, and arteriosclerosis. Arthritis and rheumatism, although the leading chronic conditions in the elderly, account for relatively few deaths and only 2% of hospital days. They do, however, account for 16% of all days spent in bed.

One important new concept that has developed in looking at the relationship between mortality and disability has been the calculation of "active life expectancy." Using the longitudinal data of all the persons in Framingham, Katz and colleagues computed the active life expectancy, which they defined as the expected number of years of remaining life in which one remains independent (needs no help in performing activities of daily living). For example, independent persons between the ages of 65 and 69 years had an "active life expectancy" of 10.0 years but a total life expectancy of 16.5 years. Therefore, an average of 6.5 years were lived in a state of functional dependency. A major goal, then, of preventing dependency in the elderly would be to extend the "active life expectancy"—that is, adding life to years and not just years to life. This is perhaps a better statistic to monitor the health of the elderly than just mortality rates or life expectancy tables.

Results of recent studies suggest that, in the absence of